IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of: CHATTERJEE ET AL.	Confirmation No.: 8240
	Art Unit: 1652
Appl. No. 10/091,538	Examiner: Rebecca E. Prouty
Filed: March 7, 2002	Atty. Docket: IVGN 300
For: IMPROVED IN VITRO SYNTHESIS SYSTEM	

REPLY TO NOTIFICATION OF NON-COMPLIANT APPEAL BRIEF (37 CFR 41.37)

Mail Stop Appeal Brief - Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

In response to the Notification of Non-Compliant Appeal Brief dated February 20, 2008, the Applicant submit this reply.

It is not believed that extensions of time or fees is required beyond those that may otherwise be provided for in documents accompanying this paper. However, if additional extensions of time are necessary to prevent abandonment of this application, then such extensions of time are hereby petitioned under 37 C.F.R. § 1.136(a), and any fees required therefor (including fees for the net addition of claims) are hereby authorized to be charged to our Deposit account No. 50-3994.

Remarks.

The Notification of Non-Compliant Appeal Brief dated February 20, 2008 ("Notice") stated that the appeal brief filed by the Applicant on February 1, 2008 was found to be non-compliant as it did not contain a correct copy of the appealed claims as an appendix thereto as required by 37 CFR 41.37(c)(1)(vii) because it did not contain a clean copy of the appealed claims. The Notice indicated that the entire brief is not required, only the section that was found to be defective.

The applicant attaches hereto a clean copy of the appealed claims. The Applicant respectfully requests that the claims found at page 13 to 16 of the appeal brief be deleted and replaced by the attached clean copy of the appeal claims. The applicants also respectfully request that this paper be entered.

Respectfully submitted,
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Date: March 12, 2008

VIII. CLAIMS APPENDIX

1. An *in vitro* protein or nucleic acid synthesis system comprising:
at least one extract from an E. coli cell having a mutation that results in reduced activity of at least one nuclease, wherein said E. coli cell does not express Gam, wherein said at least one extract is modified by the addition of Gam protein.

16. The *in vitro* synthesis system according to claim 1, further comprising at least one nucleic acid template selected from the group consisting of a DNA template and an RNA template.

17. The *in vitro* synthesis system according to claim 16, comprising at least one DNA template and wherein the *in vitro* synthesis system is an *in vitro* transcription/ translation system.

28. The *in vitro* synthesis system according to claim 1, wherein said Gam protein is a soluble Gam protein.

30. The *in vitro* synthesis system according to claim 1, comprising at least one energy source.

41. A kit for *in vitro* synthesis comprising:

at least one extract from an E. coli cell having a mutation that results in reduced activity of at least one nuclease, wherein said E. coli cell does not express Gam, wherein said at least one extract is modified by the addition of Gam protein; and

one or more nucleotides or derivatives thereof, one or more amino acids or derivatives thereof, one or more polymerases, one or more cofactors, one or more buffers or buffer salts, one or more energy sources, one or more nucleic acid templates, or one or more reagents to determine the efficiency of the kit or assay.

51. A composition comprising:

at least one extract from an E. coli cell having a mutation that results in reduced activity of at least one nuclease, wherein said E. coli cell does not express Gam~~,~~ wherein said at least one extract is modified by the addition of Gam protein, and

at least one nucleic acid template in the presence of at least a partial synthesis product of said template.

52. The composition according to claim 51, wherein the product is a nucleic acid product.

53. The composition according to claim 52, wherein the nucleic acid product is a DNA.

54. The composition according to claim 52, wherein the nucleic acid product is a RNA.

55 The *in vitro* synthesis system of claim 30, comprising at least two energy sources.

57. The kit of claim 41, comprising at least two energy sources.

60. The composition of claim 51, further comprising at least two energy sources providing chemical energy for synthesis.

61. The *in vitro* protein or nucleic acid synthesis system of claim 1, wherein said nuclease is a DNase.

62. The *in vitro* protein or nucleic acid synthesis system of claim 61, wherein said DNase is exonuclease I, exonuclease II, exonuclease III, exonuclease IVA, exonuclease IVB, RecBCD (exonuclease V), exonuclease VII, exonuclease VIII, RecJ,
dRpase, endonuclease I, endonuclease III, endonuclease IV, endonuclease V, endonuclease VII, endonuclease VIII, endonuclease A, fpg, uvrABC, mutH, vsr endonuclease, ruvC, ecoK, ecoB, mcrBC, mcrA, mrr, topoisomerase I, topoisomerase II, topoisomerase III, or topoisomerase IV.

69. The kit of claim 41, wherein said nuclease is a DNase.

70. The kit of claim 69, wherein said DNase is exonuclease I, exonuclease II, exonuclease III, exonuclease IVA, exonuclease IVB, RecBCD (exonuclease V), exonuclease VII, exonuclease VIII, RecJ, dRpase, endonuclease I, endonuclease III, endonuclease IV, endonuclease V, endonuclease VII, endonuclease VIII, endonuclease A, fpg, uvrABC, mutH, vsr endonuclease, ruvC, ecoK, ecoB, mcrBC, mcrA, mrr, topoisomerase I, topoisomerase II, topoisomerase III, or topoisomerase IV.

77. The composition of claim 51, wherein said nuclease is a DNase.

78. The composition of claim 77, wherein said DNase is exonuclease I, exonuclease II, exonuclease III, exonuclease IVA, exonuclease IVB, RecBCD (exonuclease V), exonuclease VII, exonuclease VIII, RecJ, dRpase, endonuclease I, endonuclease III, endonuclease IV, endonuclease V, endonuclease VII, endonuclease VIII, endonuclease A, fpg, uvrABC, mutH, vsr endonuclease, ruvC, ecoK, ecoB, mcrBC, mcrA, mrr, topoisomerase I, topoisomerase II, topoisomerase III, or topoisomerase IV.

85. The *in vitro* synthesis system according to claim 55, wherein each of the at least two different energy sources generates or regenerates high energy triphosphate compounds for the synthesis.

86. The *in vitro* synthesis system according to claim 85, wherein the at least two different energy sources are selected from the group consisting of pyruvate, phosphoenolpyruvate (PEP), carbamoyl phosphate, acetyl phosphate, creatine phosphate, phosphopyruvate, glyceraldehyde-3-phosphate and glucose-6-phosphate.

87. The *in vitro* synthesis system of claim 86, wherein two of the at least two energy sources are phosphoenol pyruvate and acetyl phosphate.

91. The kit of claim 57, wherein each of the at least two different energy sources generates or regenerates high energy triphosphate compounds for the synthesis.

92. The kit of claim 91, wherein the at least two different energy sources are selected from the group consisting of pyruvate, phosphoenolpyruvate (PEP), carbamoyl phosphate, acetyl phosphate, creatine phosphate, phosphopyruvate, glyceraldehyde-3-phosphate and glucose-6-phosphate.

93. The kit of claim 92, wherein two of said at least two energy sources are phosphoenol pyruvate and acetyl phosphate.

94. The composition of claim 60, wherein each of the at least two different energy sources generates or regenerates high energy triphosphate compounds for the synthesis.

95. The composition of claim 94, wherein the at least two different energy sources are selected from the group consisting of pyruvate, phosphoenolpyruvate (PEP), carbamoyl phosphate, acetyl phosphate, creatine phosphate, phosphopyruvate, glyceraldehyde-3-phosphate and glucose-6-phosphate.

96. The composition of claim 95, wherein two of said at least two energy sources are phosphoenol pyruvate and acetyl phosphate.